

**STEERING COMMITTEE CONFERENCE CALL**  
**ETV DRINKING WATER SYSTEMS CENTER**  
**December 2, 2009**

A Steering Committee (SC) conference call was held on December 2, 2009 to review the current status of the Environmental Technology Verification (ETV) Drinking Water Systems (DWS) Center and to discuss future initiatives. Many SC members were present in person for the call, because they were at the NSF headquarters for another meeting.

**Attendees:**

*In Person*

Bartley, Bruce – NSF International  
Blumenstein, Michael – NSF International  
Bernados, Brian – California Department of Public Health, Drinking Water Program  
Cleland, Jim – Michigan Department of Environmental Quality  
Nieminski, Eva – Utah Department of Environmental Quality  
Sakaji, Rick – East Bay Municipal Utility District (California)  
Weise, James – Alaska Department of Environmental Conservation

*By phone*

Adams, Jeff – U.S. EPA/Office of Research and Development (ORD)  
Biberstine, Jerry – National Rural Water Association (NRWA)  
Logsdon, Gary – consulting engineer  
Anderson, Anita – Minnesota Department of Health  
Niles, Frank – Massachusetts Department of Environmental Protection  
Girvan, Larry – Maine Department of Health and Human Services  
Posy, Phyllis – Atlantium Technologies  
Kristof Champney, Dawn – Water and Wastewater Equipment Manufacturers Association, Inc. (WWEMA)  
Lesznik, Gaspar – Ozonia North America, Inc.  
Festger, Adam – Trojan Technologies

Bruce Bartley (NSF) welcomed everyone to the conference call, and gave a PowerPoint presentation updating everyone on current ETV projects. The presentation was viewable in real-time over the internet for those participating by phone.

With slide number 1, Bruce discussed recent laboratory-only verification tests of Siemens Memcor and Dow Chemical ultrafiltration (UF) modules, which had established *Bacillus* endospores as a surrogate for *Cryptosporidium*.

Gary Logsdon informed the group that AWWA is updating its manual for MF and other membrane processes.

Bruce's next slide addressed upcoming ETV UV reactor validations. NSF and an expert panel have updated the ETV protocol for UV reactors to address the new EPA UV Guidance Manual. The ETV protocol provides more detail than the guidance manual. One criterion for upcoming reactor validations will be to validate a dose of 40 mJ/cm<sup>2</sup>.

The following slide addressed emergency water treatment units, such as the US military's Expeditionary Unit Water Purifier (EUWP) that was recently tested on three different water sources (fresh surface water, seawater, and secondarily treated wastewater). There is a new hospital accreditation requirement that the hospital needs to have a plan in place to address a water supply interruption of 96 hours. Hospitals could use an emergency mobile water treatment system to provide water during a service interruption. However, Jeff Adams (EPA) brought up the issues of state permitting for temporary treatment plants.

Rick Sakaji (East Bay MUD) mentioned a new requirement for dialysis facilities to have emergency potable water supplies plan. Mr. Sakaji also noted the need to be aware of regulations from other federal agencies, and that there are other facilities besides hospitals that need special attention.

The next point of discussion was funding of the ETV program for 2010. There currently is no EPA funding available to commit to ETV for fiscal year 2010. Jeff Adams summarized the status of EPA's agreement with NSF. ETV efforts are conducted under an assistance agreement not thru a contract mechanism. EPA provides assistance through reviews of test plans and reports, and expert technical input on testing and other issues. The EPA is looking at redesigning the ETV program, and perhaps including different funding mechanisms.

James Weise (Alaska) stated that he would like to see more funding for small systems. Mr. Weise asked Jeff Adams whether he had any thoughts on future funding plans. Jeff replied that NRMRL could not make any funding commitments until they get a handle on current EPA Administration priorities. The ETV program has had meetings with staff from the EPA Office of Water, making small systems issues known. James Wiese asked how States can become more involved in influencing research priorities for EPA. Jeff Adams replied that the States should work through industry groups, and also EPA regions. The States should contact the EPA regional offices to express concerns.

Gary Logsdon stated that back in the 1970s and 1980s the EPA's wastewater schemes for small systems were too expensive and too complicated. The ETV program is supposed to address costs and O&M issues. The EPA and ETV program need to make sure costs are included for small systems verifications and other studies. Jeff Adams replied that EPA includes costs in case studies, such as arsenic demonstration evaluations led by Tom Sorg. James Weise stated that he would like to see EPA look at more case studies for microbial rules.

Bruce Bartley moved on to the next topic, the concept of NSF moving from ETV verifications to NSF certifications for membranes and UV reactors. Membrane

manufacturers have confidentiality concerns with providing the States with all of the information required by the LT2 Rule, such as QC testing methods and quality control release values (QCRV). Certifications can protect confidential information. NSF wants to begin membrane certifications for the LT2 product specific performance testing requirement. NSF would perform annual audits, and would look at the QCRV records during the audits.

Bruce informed the group that the Joint Committee overseeing Standard 50 for pool and spa equipment is essentially adopting the ETV UV protocol by requiring drinking water level testing and performance for UV reactors.

The group cautioned NSF about certifications for contaminants where performance can be site specific, like with arsenic.

Brian Bernados (California) discussed how California has handled membrane approvals and piloting. They have required testing of one or two modules in the field. Their new approach is to assess the most conservative situation of the performance of a module that does not pass the manufacturer's QC test. California has run their approach by EPA, with no objections. They test clean membranes, and also modules that have been fouled, but set the log removal credit at the demonstrated performance of the clean membrane.

Bruce Bartley then asked for stakeholder priorities: what should EPA and ETV be focusing on. Jeff Adams mentioned EPA solicitations for involvement from manufacturers on priority issues and emerging contaminants, with the manufacturer paying for testing.

Larry Girvan (Maine) stated that a priority in Maine is UV validations for small systems. Larry also suggested testing of systems for unregulated contaminants of concern to avoid another arsenic situation. Bruce Bartley asked the group if they would be interested in NSF hosting a UV web conference. The general response was positive. Larry Girvan stated that Maine doesn't have a UV expert. Maine currently has a couple of pending UV installations, and validation testing suggestions from manufacturers vary widely.

Referencing one of Bruce Bartley's slides stating "UV may need 3 years before decision", Jerry Biberstine (NRWA) asked "Was that 3 years to UV validation comments?" Bruce replied that 3 years is his estimated timeline to move from ETV verifications to NSF certifications. States need to get validation processes started. There are many small systems looking at UV vs. more expensive options. NSF should have UV validations in process by summer. Jerry suggested that NSF release some information through ASDWA on UV verification timelines.

Gaspar Lesznik (Ozonix) stated that his company has been going through reactor validations using the DVGW testing facility, and also HydroQual's facility. He stated that new regulations for additional testing are a concern. Bruce Bartley replied that ETV verifications can include existing data. Jeff Adams added that ETV does not compete with DVGW or HydroQual. The new ETV UV protocol takes the EPA UV Disinfection

Guidance Manual, and makes it into a useful test plan. Jeff also added that for existing data, peer review is required before it can be accepted. Gaspar Lesznik stated that it would behoove NSF and EPA to make the market aware that ETV is not required.

Jeff Adams asked Bruce Bartley about the current status of the idea of an NSF web portal for existing data? Bruce replied that it is still on the table, and explained to the group that NSF wants to have a web portal that is a central location where States can access existing peer-reviewed UV data that manufacturer's can submit.

Gaspar Lesznik said Ozonia has been inundated with requests for ozone treatment for endocrine disruptors. He asked if there was any guidance on how to promote ozone for EDCs? Bruce Bartley replied that EPA ORD has key interest in EDCs. Jeff Adams added that there are some EDCs on the CCL3 list. Eva Nieminski (Utah) added that WRF has a strategic initiative for personal care products, which includes ozone studies. Ozonia can contact them directly to get more details.

Gary Logsdon mentioned groundwater issues. Most small systems use ground water, so he would like to see ETV and EPA focus on small systems for groundwater applications. Another issue Gary would like to see addressed is the impact of EDC exposure on aquatic organisms.

Frank Niles stated that another priority for Maine is more studies on virus removal by membranes. It was recommended that the ETV Center hold conference calls on the issue of membranes in general including the issue of virus removal.

Anita Anderson (Minnesota) stated that she works primarily with small surface water systems, and she is interested in membrane integrity issues vs. *Cryptosporidium* removal. Minnesota has many systems using bag filters. She added that she is interested in web portal, or a place for States to provide information and feedback. Minnesota has done UV field verifications and would be interested in sharing data through a web portal.

Adam Festger (Trojan Technologies) said Trojan is interested in commenting on the UV protocol. He added that he would like to see existing validations explicitly addressed in the new protocol.

James Weise stated he would like to see greater coordination between WRF, NSF, and ORD. He thinks the organizations should have monthly teleconferences. He would also like to see greater focus on small systems. He would like to see some emphasis put on the approval of bag/cartridge filters that address the LT2 rule, otherwise many systems may need to turn to UV inactivation of microbials. He stated that he doesn't think EPA should regulate EDCs or PCPs until technologies are in place to remove them. Bruce Bartley replied that bag/cartridge filters are low cost and low margin, so manufacturers may not want to pay for testing.

James Weise added that he sees a need for more pilot studies, or more case studies. He would like to see EPA provide funding to ETV; vendors will not go through ETV because of the cost.

Jim Cleland (Michigan) stated that he would like to see the upcoming ground water rules addressed. Biggest issue he sees is microbiological contaminants. The lesson from the arsenic rule is that operational complexity is the biggest issue due to operator turnover.

Eva Nieminski said that Utah needs assistance with UV validations. They would like to have a place to ask questions, or ask for advice when reviewing UV validation reports and permitting installations. Utah currently has a consulting firm review reports. Eva added that she likes the idea of existing data review under ETV, and the web portal.

Eva Nieminski also stated that she would like to see more coordinated research projects between NSF and other agencies, especially WRF. James Weise voiced his agreement. Bruce Bartley suggested that perhaps WRF and AWWA could participate on the NSF Council of Public Health Consultants, which oversees all NSF standards, and can request that NSF focus on certain issues. Rick Sakaji suggested that WRF could present the next year's list of RFPs at NSF and/or ETV meetings. James Weise voiced support, asking WRF to be on the ETV stakeholders group.

Brian Bernados stated that his priority issues for California are arsenic and uranium treatment. Small systems are having the hardest time with these contaminants. At issue is not only treatment, but disposal also. There are high costs associated with waste disposal, both brine and spent media.

Rick Sakaji stated that he thinks standardized testing protocols are very important, so ETV needs to stay active. He also added that he doesn't think standards should be in place for EDCs or PCPs until there are standardized analytical methods available.

Jeff Adams asked the group if anyone had any concern about alternative disinfectants, because in the future, test protocols may need to address DBPs, and/or lead and copper corrosion. He added that if ETV doesn't get additional funding and needs to depend on vendors to pay for testing, they probably won't want to pay for testing to address these additional simultaneous compliance issues. He asked for any ideas about how ETV should address this issue.

Rick Sakaji asked why ETV is not mentioned in the documentation of best available technologies when EPA promulgates a new contaminant or treatment rule. Jeff Adams replied that this question has been asked of the Office of Water, and that they talk about a lack of staff, and a lack of funding to coordinate activities. Rick Sakaji replied that the regulations should say to look to ETV program for assistance and more information. James Weise added that ASDWA could also be stated as a group to contact for assistance. Jeff Adams replied that such requests to the Office of Water would have more clout coming from ASDWA as opposed to coming from the ETV program. Jeff also

added that there are many entities in EPA all fighting for funding, and EPA Headquarters is in the process of determining what has priority for funding.

Dawn Kristof Champney (WWEMA) stated that a survey results report coming out soon will highlight the usefulness of guidance and test protocols to bring emerging technologies to market. She added that she doesn't think the ETV web site is prominent enough. She suggested that AWWA should manage the web portal for ETV type studies.

Bruce Bartley moved the discussion on to his next slide about vendor chapters in ETV reports. Currently there is no guidance. Proposed guidance is that vendor chapters can be a place where the vendor addresses testing results, O&M issues, engineering recommendations for scaling up or down, supplemental data, or any changes to product design based on the testing results. Rick Sakaji suggested allowing vendors to respond to reviews, or restrict their chapter to addressing review comments.

Bruce Bartley asked for any final comments or suggestions.

Gary Logsdon suggested that ETV have more frequent stakeholder conference calls to help move things along faster.

With no other comments or suggestions, Bruce Bartley concluded the conference call.